

### Remarks

Claims 22-42 were pending in the application. Claims 22-42 were rejected. No claims were merely objected to and no claims were allowed. By the foregoing amendment, claim 22 is amended and no claims are added. No new matter is presented.

### Claim Objection

The examiner requested the addition of "metallic" in line 5 of claim 22. However, it appears the more correct amendment involves deleting the words "metallic annular" from line 8 of that claim.

### Claim Rejections-35 U.S.C. 102

Claims 22 and 25 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent no. 3,272,521 of McNenny. Applicant respectfully traverses the rejection.

McNenny discloses a radial "rotary" seal for sealing a "reciprocating shaft" relative to a bore in which the shaft fits. Col. 1, line 28 and col. 3, lines 47-49. Accordingly, rather than being C-shaped and open radially outward as is presently claimed, the section is appropriately described as open longitudinally. This longitudinal rather than radial opening is shown in every figure of McNenny and is not subject to reasonable dispute. Accordingly, claims 22 and 25 are not anticipated by McNenny. Furthermore, any portions asserted by the examiner as being straight portions also extend longitudinally. As for the claimed leakage rate, there is no reasonable basis for assuming such a leakage rate would be possible with the rotary seal of McNenny.

Claims 22, 23, and 25 were rejected under 35 U.S.C. 102(b) as being anticipated by French patent no. 610,973 of Barbarou. Applicant respectfully traverses the rejection.

Regarding claim 22, Barbarou clearly shows a seal whose members are open radially inward rather than open radially outward. This is clearly shown in FIGS. 1-3 of Barbarou. The same argument applies to dependent claims 23 and 25. Regarding claim 23, the examiner asserted that Barbarou discloses the inner member as having "a full plating of a copper-base material (Lines 33-39)." Office action, page 4. The examiner had helpfully provided a translation

of Barbarou. Nowhere in the translation is a plating, coating, or similar surface treatment identified. Copper is only identified as material for "sheet B". The examiner has, already, identified item B as being the inner metallic annular member and not as a plating (let alone a full plating). Thus, there is no suggestion for plating the inner member. This, in combination with the existence of the outer member has been observed to provide a uniquely enhanced appearance. See page 4, lines 15-16 of the present application.

Regarding claim 25, there is no indication that Barbarou is capable of providing the claimed leakage rate.

Claims 26, 27, 29-33, and 35-37 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent no. 3,188,100 of Delgado. Applicant respectfully traverses the rejection.

Regarding claim 26, the machining process of Delgado does not leave a generally C-shaped outer metallic annular member. Rather, it leaves a series of five portions of a former such member. Regarding claim 29, there is no support for the assertion that the ridges have a longitudinal extent beyond a thickness of the outer member away from the ridges. Claim 26 identified the ridges as portions of the outer metallic annular member. The examiner's apparent hypothesized thickness can only be obtained by improperly combining those ridges with ridges machined in the inner member.

Regarding claim 30, no flat lapping is shown in Delgado and the examiner has failed to identify any flat lapping.

Regarding claim 31, Delgado fails to disclose an outer metallic annular member thicker along the ridges than anywhere else. Even accepting the segments of the former outer member of Delgado, the segments along the ridges are, at most, as thick as other portions, not thicker.

It is worth note that, although the examiner asserted Delgado's members as open radially outward, FIG. 2 of Delgado clearly shows them as open radially inward. Nevertheless, the radial outward opening limitation is not present in any of the claims rejected as anticipated by Delgado.

Claims 35 and 38 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent no. 4,561,662 of de Villepoix et al. Applicant respectfully traverses the rejection.

Regarding claim 38, the examiner asserted that de Villepoix et al. "illustrates that the outer member is thicker along the ridges." Office action, page 5. This, however, is by no means clear. In the preuse condition of FIG. 1 of de Villepoix et al. it would appear that the ridges merely are close to the thickness of the unmachined material (e.g., where the leadline for reference numeral 16 is). Clearly, if the outer layer of de Villepoix et al. is initially of an even thickness, and then the ridges are machined from that material, the ridges must be no thicker than the unmachined material. Claim 35 identifies the ridges as having a longitudinal extent beyond a thickness of the outer member everywhere away from the ridges (i.e., the thickness at the ridges is thicker than, not merely at least as thick as, the thickness everywhere else).

Claims 35 and 37 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent no. 5,022,663 of Fages et al. Applicant respectfully traverses the rejection.

As with deVillepoix et al., Fages et al. discloses a seal wherein an "elastic core is constituted by a metal helical spring 12 ..." Col. 3, lines 39-40. The Fages et al. variation involves forming "the outer casing 16 ... of a hard metallic material" potentially including the nickel-based superalloy "Inconel". Col. 3, lines 56-59. The examiner merely asserted that "Fages illustrates that the outer metallic annular member is thicker along the ridges." Office action, page 6. The examiner has failed to cite any source for this thickness. As with de Villepoix et al., it merely appears the Fages et al. ridges are nearly as thick, but no thicker than remaining material.

#### Claims Rejections- 35 U.S.C. 103

Claims 22, 23, and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Delgado in view of Barbarou. Applicant respectfully traverses the rejection.

As noted above, neither reference discloses the members as being open radially outward. The examiner asserted that it would have been obvious "to have an inner member, as taught by Barbarou, into [sic] a device as described by Delgado, because it is considered as a change in the shape of a prior art [sic]." Office action, page 7. The examiner cited *In re Dailey and Eilers*, a case which does not appear to have ever been followed and which, at the relevant passage, noted only that the applicants have failed to identify "that the particular configuration of their container is significant or is anything more than one of numerous configurations a person of ordinary skill

in the art would find obvious for the purpose of providing mating surfaces in the collapsed container of Matzen." 149 USPQ 50. There is no reason why one of ordinary skill in the art would have attempted the combination. First, Barbarou itself was prior art to Delgado. If such an adoption was obvious, Delgado would have made it. Second, Barbarou shows the sealing as being achieved at the distal extremity of its relatively straight portion. Delgado shows sealing at a relatively intermediate portion (i.e., at the ridges). The adoption of Barbarou's straight portions would have been incompatible with Delgado because their function in Barbarou would not be achieved in the Delgado-Barbarou combination.

Although Barbarou's insufficiencies regarding the plating are noted above, it is further noted that the examiner's asserted motivation to combine of "in order to use the different material characteristics to improve the seal." is insufficient and without citation. The same insufficiency extends to the other objections below wherein this alleged motivation was cited.

As for the leakage rate, there is no indication that the hypothesized combination could be optimized to achieve the claimed rate.

Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over McNenny in view of Barbarou. Applicant respectfully traverses the rejection.

The rejection is believed overcome for the reasons noted above regarding McNenny and claim 22.

Claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over McNenny in view of de Villepoix et al. Applicant respectfully traverses the rejection.

The rejection is believed overcome for the reasons noted above.

Claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over Barbarou in view of de Villepoix et al. Applicant respectfully traverses the rejection.

The rejection is believed overcome for the reasons noted above.

Claim 24 was rejected under 35 U.S.C. 103(a) as being unpatentable over Delgado in view of Barbarou and further in view of de Villepoix et al. Applicant respectfully traverses the

rejection.

The rejection is believed overcome for the reasons noted above.

Claims 28, 34, 38 and 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Delgado in view of de Villepoix et al. Applicant respectfully traverses the rejection.

The rejection is believed overcome for the reasons noted above.

Claims 30-34 and 37 were rejected under 35 U.S.C. 103(a) as being unpatentable over de Villepoix et al. in view of U.S. patent no. 6,357,759 of Azuma et al. Applicant respectfully traverses the rejection.

The examiner asserted would have been obvious to "have flat lapped ridges" "in order to secure the outer member with [sic] the first and second flanges." Applicant is unable to understand this asserted motivation for which no support has been cited. Azuma et al. shows a seal having flat ridges but does not identify how those ridges are manufactured. Azuma et al. does note that its seal does not require "high machining accuracy" and is "reusable". Abstract. These attributes do not suggest combination with de Villipoix et al. in which the ridges are crushed. Furthermore, as noted above, any flattening of the ridges of de Villipoix et al. would further reduce their thickness and yet more clearly distinguish claims 31 and 32 directly and claim 37 via claim 35. Regarding the thickness difference, the examiner identified FIG. 3 of Azuma et al. Office action, page 13. The examiner further asserted that it would have been obvious "to have a difference in thickness, as taught by Azuma, into a device as described by de Villepoix, in order to help in the sealing of the outer metallic annular member with the first and second flanges." Id. No such pair of members are shown in Azuma et al. and the motivation is merely conclusory.

Claims 30-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fages et al. in view of Azuma et al. Applicant respectfully traverses the rejection.

The rejection is believed overcome for the same reasons as noted above regarding de Villepoix et al. and Azuma et al.

Claims 34 and 38 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fages et al. in view of Azuma et al. and further in view of de Villepoix et al. Applicant respectfully traverses the rejection.

For the reasons discussed above, the rejections are believed overcome.

Claim 39 was rejected under 35 U.S.C. 103(a) as being unpatentable over de Villepoix et al. in view of Barbarou. Applicant respectfully traverses the rejection.

For the reasons discussed above regarding the failure of Barbarou to disclose plating, the rejection is believed overcome.

Claim 39 was rejected under 35 U.S.C. 103(a) as unpatentable over Fages et al. in view of Barbarou. Applicant respectfully traverses the rejection.

As with the de Villepoix et al. and Barbarou rejection above, the rejection is believed overcome.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNenny in view of Halling. Applicant respectfully traverses the rejection.

The asserted combination fails to identify the combination of roll forming of ridges and flat lapping. Furthermore no sufficient motivation has been asserted for the combination. The examiner merely asserted the motivation "in order to create the seal". The combination further fails to disclose the inner member plating of claims 41 and 42.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barbarou in view of Halling. Applicant respectfully traverses the rejection.

For the same reasons discussed with respect to the McNenny and Halling rejection, the rejection is believed overcome.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delgado in view of Halling. Applicant respectfully traverses the rejection.

For the same reasons discussed with respect to the McNenny and Halling rejection, the

rejection is believed overcome.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delgado in view of Barbarou, and further in view of Halling. Applicant respectfully traverses the rejection.

For the same reasons discussed with respect to the McNenny and Halling rejection, the rejection is believed overcome.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Villepoix et al. in view of Halling. Applicant respectfully traverses the rejection.

For the same reasons discussed with respect to the McNenny and Halling rejection, the rejection is believed overcome.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fages et al. in view of Halling. Applicant respectfully traverses the rejection.

For the same reasons discussed with respect to the McNenny and Halling rejection, the rejection is believed overcome.

Accordingly, Applicant submits that claims 22-42 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account 02-0184.

Respectfully submitted

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